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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,518	10/04/2005	Yuriy Sergeevich Volkov	P07129US00	6161
22885	7590	08/12/2009		
MCKEE, VOORHEES & SEASE, P.L.C. 801 GRAND AVENUE SUITE 3200 DES MOINES, IA 50309-2721			EXAMINER WALTERS JR, ROBERT S	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 08/12/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patatty@ipmvs.com

Office Action Summary

Application No.

10/529,518

Applicant(s)

VOLKOV ET AL.

Examiner

ROBERT S. WALTERS JR

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 21-27 and 29-35 is/are pending in the application.
4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 21-27 and 29-35 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Application

Claims 1-8, 21-27 and 29-35 are pending. Claims 1-8 are withdrawn. Claims 21-27 and 29-35 are presented for examination.

Response to Arguments

Applicant's arguments filed 4/24/2009 have been fully considered but they are not persuasive.

The applicant first argues that the rejection of claim 21 is improper based upon the examiner taking official notice that "it is well known in the art at the time of the invention that liquid, specifically molten metal, can be transported by differences in pressure". To rebut this argument the examiner presents that differences in pressure for transporting liquids is a well known physical principle, and that many conventional pumps work based upon this principle. Further, to rebut this argument the examiner presents Chandley (U.S. Pat. No. 5042561) as evidence that this was known in the art. Chandley teaches transporting molten metal into a mold above a lower reservoir (abstract) by applying pressure to the lower reservoir (Chandley at claim 14) while evacuating the mold (Chandley at claim 2). Therefore, the examiner maintains that it was well known in the art at the time of the invention to transport molten metal by differences in pressure.

The applicant then argues that the examiner has not provided sufficient motivation for modifying Delot by utilization of a pressure differential in place of Delot's pump. However, the

examiner argues that it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a pressure differential to pump the melt to the camera in place of Delot's pump. First, Delot actually recognizes that other means for transporting the molten metal may be utilized (see Delot at column 6, lines 94-97). Further, the prior art contains a teaching of a device for transporting molten metal by pressure differentials (see above), and one of ordinary skill in the art could have readily modified Delot's device by substituting a pressure differential for Delot's pump with a reasonable expectation of success and a predictable result. Therefore, the examiner maintains that one of ordinary skill in the art at the time of the invention could have substituted a pressure differential in Delot's device for Delot's pump to provide applicant's claimed invention.

The applicant then argues that the rejection of claim 29 is improper based upon the examiner taking official notice that "it is well known that pressure differential can be used to contain materials in given locations which would be expected to retain coating material in the desired area." To rebut this argument the examiner presents that differences in pressure for preventing liquids from moving from one location to another is a well known physical principle, and that many devices utilize just such a principle. Further, to rebut this argument the examiner presents Maruyama (U.S. PGPUB No. 2002/0025260) as evidence that this was known in the art. Maruyama teaches preventing leakage of solder from an opening by creating a negative pressure to contain the solder in a desired location (Figure 7 and 0209). Therefore, the examiner maintains that it is well known in the art at the time of the invention to utilize pressure differential to contain materials in a given location.

The applicant further argues that the examiner has not provided sufficient motivation for modifying Delot by utilization of a pressure differential to prevent leakage of the coating material. However, the examiner argues that the addition of this particular feature would provide further protection from any coating material leaking through the molten metal-type sealing nozzles. Further, the prior art contains a teaching of utilizing pressure differentials to prevent leakage (see above), and one of ordinary skill in the art could have readily modified Delot's device by substituting a pressure difference for Delot's molten metal-type sealing nozzles or in addition to the nozzles with a reasonable expectation of success and a predictable result. Therefore, the examiner maintains that one of ordinary skill in the art at the time of the invention could have added a pressure differential in Delot's device to provide applicant's claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
-
1. Claims 21-27 and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delot et al. (GB 1546635).
-
- I. Regarding claims 21, 22 and 24-27, Delot teaches a device for applying coating to a lengthy product (see Figure 1), such as a wire (column 1, lines 30-37) by plunging the product into a melt of the coating comprising:
 - (a) a tank with the melt with means for heating the melt (see element 12, Figure 1 and column 2, lines 71-75);
 - (b) a camera for applying the coating melt above the tank and having opposite input and output passages (located in the side walls of the camera) through which the product passes (see element 5, Figure 1);
 - (c) the camera having in its lower part an intake vertical passage plunged into the tank (element 24, Figure 1); and
 - (d) a valve or outlet for introducing gas into the camera that could control the pressure in the camera.
- Delot further teaches maintaining the pressure in the system equal to the atmospheric pressure (column 2, lines 51-53), and the camera having level control means (see element 10, Figure 1). Delot further recognizes that other known methods for applying the molten metal to the camera can be substituted for the pump (column 6, lines 94-97).

Delot fails to teach the camera and tank having pressure control and discharge means as claimed such that the melt is transported to the camera. However, it is well known in the art at the time of the invention that liquid, specifically molten metal, can be transported by differences in pressure. Furthermore, pumps (which Delot is utilizing) generally act to provide a pressure differential to move liquids from one location to another. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's apparatus by including an outlet in the upper portion of the camera to discharge pressure, and an inlet in the tank, to create pressure, whereby the melt can be transported to the camera by a created pressure differential. One would have been motivated to make this modification as it would simply be the substitution of a pressure differential for moving molten metal in place of a pump as used in Delot's method. Further, one of ordinary skill could have made this substitution with a reasonable expectation of success simply by utilizing valve 2 (see Figure 1) in Delot's device for evacuating the camera to pump some liquid from the tank to the camera, and if necessary applying an inert gas inlet above the melt in the tank to create more pressure in the tank. Finally, the results of this substitution would be predictable, namely it would essentially provide a pump for transporting molten metal to the coating camera.

II. Regarding claim 23, Delot teaches all the limitations of claim 21 as well as the tank having melt heating means (see above) but fails to specifically teach the camera having melt heating means. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's device by also having the camera having melt heating

means. One would have been motivated to make this modification to ensure that the melt in the camera does not solidify and destroy the functionality of the device.

III. Regarding claims 29-31 and 33-35, Delot teaches a device for applying coating to a lengthy product (see Figure 1), such as a wire (column 1, lines 30-37) comprising:

- (a) a tank with the melt with means for heating the melt (see element 12, Figure 1 and column 2, lines 71-75);
- (b) a camera for applying the coating melt above the tank and having opposite input and output passages (located in the side walls of the camera and below the level of coating material in the camera) through which the product passes (see element 5, Figure 1);
- (c) the camera having in its lower part an intake vertical passage plunged into the tank (element 24, Figure 1); and
- (d) a valve or outlet for introducing gas into the camera that could control the pressure in the camera.

Delot further teaches the camera having level control means (see element 10, Figure 1). Delot further recognizes that other known methods for applying the molten metal to the camera can be substituted for the pump (column 6, lines 94-97).

Delot fails to particularly teach the device having inputs and outlets for increasing and decreasing the pressure to cause melt to flow to the camera or having the pressure of the camera less than atmospheric to prevent leakage of the coated material through the inlet and outlet of the camera. However, first, it is well known in the art at the time of the invention that liquid, specifically molten metal, can be transported by differences in pressure. Furthermore, pumps

(which Delot is utilizing) generally act to provide a pressure differential to move liquids from one location to another. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's apparatus by including an outlet in the upper portion of the camera to discharge pressure, and an inlet in the tank, so create pressure, whereby the melt can be transported to the camera by a created pressure differential. One would have been motivated to make this modification as it would simply be the substitution of a pressure differential for moving molten metal in place of a pump as used in Delot's method. Further, one of ordinary skill could have made this substitution with a reasonable expectation of success simply by utilizing valve 2 (see Figure 1) in Delot's device for evacuating the camera to pump some liquid from the tank to the camera, and if necessary applying an inert gas inlet above the melt in the tank to create more pressure in the tank. Finally, the results of this substitution would be predictable, namely it would essentially provide a pump for transporting molten metal to the coating camera.

Second, it is well known that pressure differentials can be used to contain materials in given locations which would be expected to retain coating material in the desired area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's device to include an outlet above the melt level of the camera to release pressure such that the pressure in the camera becomes less than the atmospheric pressure to insure that coated material does not flow through the inlet and outlet. One would have been motivated to make this modification as this would help to ensure that the coating material remained in the camera rather than escaping back to the tank through the inlet and outlet, and

also preventing excess coating material from building up upon the product before being completely immersed in the coating material or after being removed from the immersion.

IV. Regarding claim 32, Delot teaches all the limitations of claim 29 as well as teaching the tank having melt heating means (see above) but fails to specifically teach the camera having melt heating means. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Delot's device by also having the camera having melt heating means. One would have been motivated to make this modification to ensure that the melt in the camera does not solidify and destroy the functionality of the device.

Conclusion

Claims 1-8, 21-27 and 29-35 are pending.

Claims 1-8 are withdrawn.

Claims 21-27 and 29-35 are rejected.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit
1792

/ROBERT S. WALTERS JR/
August 10, 2009
Examiner, Art Unit 1792

